**Section 219.187 Other Industrial Solvent Cleaning Operations**

a) Applicability. On and after January 1, 2012:

1) Except as provided in subsection (a)(2), the requirements of this Section apply to all cleaning operations that use organic materials at sources that emit a total of 226.8 kg per calendar month (500 lbs per calendar month) or more of VOM, in the absence of air pollution control equipment, from cleaning operations at the source other than cleaning operations identified in subsection (a)(2). For purposes of this Section, "cleaning operation" means the process of cleaning products, product components, tools, equipment, or general work areas during production, repair, maintenance or servicing, including but not limited to spray gun cleaning, spray booth cleaning, large and small manufactured components cleaning, parts cleaning, equipment cleaning, line cleaning, floor cleaning, and tank cleaning, at sources with emission units;

2) Notwithstanding subsection (a)(1):

A) The following cleaning operations are exempt from the requirements of subsections (b), (c), (d), (e), (f), and (g):

i) Cleaning operations subject to the limitations in Sections 219.182, 219.183, or 219.184;

ii) Janitorial cleaning;

iii) Stripping of cured coatings, inks, or adhesives;

iv) Cleaning operations in printing pre-press areas, including the cleaning of film processors, color scanners, plate processors, film cleaning, and plate cleaning;

B) Cleaning operations for emission units within the following categories are exempt from the requirements of subsections (b), (c), (d), (e), (f), and (g):

i) Flexible package printing;

ii) Lithographic printing;

iii) Letterpress printing;

iv) Flat wood paneling coating;

v) Large appliance coating;

vi) Metal furniture coating;

vii) Paper, film, and foil coating;

viii) Wood furniture coating;

ix) Plastic parts coating;

x) Miscellaneous metal parts coating;

xi) Fiberglass boat manufacturing;

xii) Miscellaneous industrial adhesives;

xiii) Auto and light-duty truck assembly coating; and

xiv) Aerospace facilities;

C) The following cleaning operations are exempt from the requirements of subsections (b), (c), (f), and (g):

i) Cleaning of solar cells, laser hardware, scientific instruments, and high-precision optics;

ii) Cleaning conducted as part of performance laboratory tests on coatings, adhesives, or inks; research and development operations; or laboratory tests in quality assurance laboratories;

iii) Cleaning of paper-based gaskets and clutch assemblies where rubber is bonded to metal by means of an adhesive;

iv) Cleaning of cotton swabs to remove cottonseed oil before cleaning of high-precision optics;

v) Cleaning of medical device and pharmaceutical manufacturing operations if the facility uses no more than 5.7 liters (1.5 gallons) per day of solvents for such cleaning;

vi) Cleaning of adhesive application equipment used for thin metal laminating;

vii) Cleaning of electronic or electrical cables;

viii) Touch-up cleaning performed on printed circuit boards where surface mounted devices have already been attached;

ix) Cleaning of coating and adhesive application processes utilized to manufacture transdermal drug delivery products using no more than three gallons per day of ethyl acetate;

x) Cleaning of application equipment used to apply coatings on satellites and radiation effect coatings;

xi) Cleaning of application equipment used to apply solvent-borne fluoropolymer coatings;

xii) Cleaning of ultraviolet or electron beam adhesive application;

xiii) Cleaning of sterilization indicating ink application equipment if the facility uses no more than 5.7 liters (1.5 gallons) per day of solvents for such cleaning;

xiv) Cleaning of metering rollers, dampening rollers, and printing plates;

xv) Cleaning of numismatic dies;

xvi) Cleaning operations associated with digital printing;

xvii) Cleaning with aerosol products if the facility uses no more than 4.7 liters (1.25 gallons) per day of those products;

xviii) Cleaning of plastic-based or vinyl-based substrates for use in the screen printing process when using UV curable ink and coating systems;

xix) Cleaning conducted as part of performance tests on coatings, adhesives, or inks that are in research and development and that are not yet commercially used for the applications for which they are being tested. This exemption is limited to the use of up to a total of 90.9 liters (24 gallons) per calendar month and 416.3 liters (110 gallons) of cleaning solvent per calendar year for that cleaning.

b) Material and Control Requirements. An owner or operator of a source subject to this Section, other than manufacturers of coatings, inks, adhesives, or resins, must not perform any cleaning operation subject to this Section unless the owner or operator meets the requirements in subsection (b)(1), (b)(2), or (b)(3). An owner or operator of a source that manufactures coatings, inks, adhesives, or resins must not perform any cleaning operation subject to this Section unless the owner or operator meets the requirements in at least one of the following subsections: (b)(1), (b)(2), (b)(3), (b)(4), or (b)(5).

1) The VOM content of the as-used cleaning solutions does not exceed the following emissions limitations:

A) Product cleaning during manufacturing process

or surface preparation for coating, adhesive, or

ink application:

|  |  |  |
| --- | --- | --- |
|  | | kg/l lb/gal |
| i) | Electrical apparatus components and electronic components | 0.10 0.83 |
|  | | |
| ii) | Medical device and pharmaceutical manufacturing | 0.80 6.7 |

B) Repair and maintenance cleaning:

|  |  |  |  |
| --- | --- | --- | --- |
|  | | kg/l lb/gal | |
| i) | Electrical apparatus components and electronic | 0.10 0.83 |
|  | | |
| ii) | Medical device and pharmaceutical manufacturing: tools, equipment, and machinery | 0.80 6.7 |
|  | | |
| iii) | Medical device and pharmaceutical manufacturing: general work surfaces | 0.60 5.0 |

C) Cleaning of ink application equipment:

|  |  |  |
| --- | --- | --- |
|  | | kg/l lb/gal |
| i) | Rotogravure printing that does not print flexible packaging | 0.10 0.83 |
|  | | |
| ii) | Screen printing, including screen reclamation activities | 0.50 4.2 |
|  | | |
| iii) | Ultraviolet ink and electron beam ink application equipment, except screen printing | 0.65 5.4 |
|  | | |
| iv) | Flexographic printing that does not print flexible packaging | 0.10 0.83 |

|  |  |  |
| --- | --- | --- |
|  |  | kg/l lb/gal |
| D) | Cleaning of equipment used in the manufacture of coatings, inks, adhesives, or resins | 0.20 1.67 |

|  |  |  |
| --- | --- | --- |
|  |  | kg/l lb/gal |
| E) | All other cleaning operations not subject to a specific limitation in subsections (b)(1)(A) through (b)(1)(D) | 0.050 0.42 |

2) The VOM composite vapor pressure of each as-used cleaning solution used does not exceed 8.0 mmHg measured at 20 °C (68 °F);

3) An afterburner or carbon adsorber is installed and operated that reduces VOM emissions from the subject cleaning operation by at least 85 percent overall, or for sources that manufacture coatings, inks, adhesives, or resins, an afterburner or carbon adsorber is installed and operated that reduces VOM emissions from the subject cleaning operation by at least 80 percent overall and has a 90 percent efficiency. The owner or operator may use an emissions control system other than an afterburner or carbon adsorber if such device reduces VOM emissions from the subject cleaning operation in accordance with the applicable capture and control requirements of this subsection (b)(3), the owner or operator submits a plan to the Agency detailing appropriate monitoring devices, test methods, recordkeeping requirements, and operating parameters for such control device, and such plan is approved by the Agency and USEPA within federally enforceable permit conditions;

4) For sources that manufacture coatings, inks, adhesives, or resins, the owner or operator complies with the following work practices:

A) Equipment being cleaned is maintained leak-free;

B) VOM-containing cleaning materials are drained from the cleaned equipment upon completion of cleaning;

C) VOM-containing cleaning materials, including waste solvent, are not stored or disposed of in such a manner that will cause or allow evaporation into the atmosphere; and

D) VOM-containing cleaning materials are stored in closed containers;

5) Sources that manufacture coatings, inks, adhesives, or resins may utilize solvents that do not comply with subsection (b)(1) or (b)(2) provided that all of the following requirements are met:

A) No more than 228 l (60 gal) of fresh solvent is used per calendar month. Solvent that is reused or recycled, either onsite or offsite, for further use in equipment cleaning or in the manufacture of coatings, inks, adhesives, or resins, must not be included in this limit;

B) Solvents, including cleanup solvents, are collected and stored in closed containers; and

C) Records are maintained in accordance with subsection (e)(6).

c) The owner or operator of a subject source must demonstrate compliance with this Section by using the applicable test methods and procedures specified in subsection (g) and by complying with the recordkeeping and reporting requirements specified in subsection (e).

d) Operating Requirements. The owner or operator of a source subject to this Section must comply with the following for each subject cleaning operation. These requirements are in addition to work practices specified in subsections (b)(4) and (b)(5), as applicable:

1) Cover open containers and properly cover and store applicators used to apply cleaning solvents;

2) Minimize air circulation around the cleaning operation;

3) Dispose of all used cleaning solutions, cleaning towels, and applicators used to apply cleaning solvents in closed containers;

4) Utilize equipment practices that minimize emissions;

5) When using cleaning solvent for wipe cleaning, sources that manufacture coatings, inks, adhesives, or resins must:

A) Cover open containers used for the storage of spent or fresh organic compounds used for cleanup or coating, ink, adhesive, or resin removal; and

B) Cover open containers used for the storage or disposal of cloth or paper impregnated with organic compounds that are used for cleanup or coating, ink, adhesive, or resin removal.

e) Recordkeeping and Reporting Requirements

1) The owner or operator of a source exempt from the limitations of this Section because of the criteria in subsection (a)(1) must comply with the following:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes:

i) A declaration that the source is exempt from the requirements of this Section because of the criteria in subsection (a)(1);

ii) Calculations that demonstrate that combined emissions of VOM from cleaning operations at the source, other than cleaning operations identified in subsection (a)(2), never equal or exceed 226.8 kg/month (500 lbs/month), in the absence of air pollution control equipment. An emission adjustment factor of 0.50 must be used in calculating emissions from used shop towels if the VOM composite vapor pressure of each associated cleaning solution is demonstrated to be less than 10 mmHg at 20 °C (68 °F) and the used shop towels are kept in closed containers. For cleaning solutions with VOM composite vapor pressure of equal to or greater than 10 mmHg measured at 20 °C (68 °F) and for shop towels that are not kept in closed containers, an emission adjustment factor must not be used;

B) On and after January 1, 2012, collect and record the following information each month for each cleaning operation, other than cleaning operations identified in subsection (a)(2):

i) The name and identification of each VOM-containing cleaning solution as applied in each cleaning operation;

ii) The VOM content of each cleaning solution as applied in each cleaning operation;

iii) The weight of VOM per volume and the volume of each as-used cleaning solution; and

iv) The total monthly VOM emissions from cleaning operations at the source;

C) Notify the Agency of any record that shows that the combined emissions of VOM from cleaning operations at the source, other than cleaning operations identified in subsection (a)(2), ever equal or exceed 226.8 kg/month (500 lbs/month), in the absence of air pollution control equipment, within 30 days after the event occurs.

2) All sources subject to this Section must:

A) By January 1, 2012 or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes:

i) A declaration that all subject cleaning operations are in compliance with this Section;

ii) Identification of each subject cleaning operation and each VOM-containing cleaning solution used as of the date of certification in such operation;

iii) If complying with the emissions control system requirement, what type of emissions control system will be used;

iv) Initial documentation that each subject cleaning operation will comply with the applicable limitation, including copies of manufacturer's specifications, test results (if any), formulation data, and calculations;

v) Identification of the methods that will be used to demonstrate continuing compliance with the applicable limitations;

vi) A description of the practices and procedures that the source will follow to ensure compliance with the limitations in subsection (d), and, if applicable, subsection (b)(4); and

vii) A description of each cleaning operation exempt under subsection (a)(2), if any, and a listing of the emission units on which the exempt cleaning operation is performed;

B) At least 30 calendar days before changing the method of compliance between subsections (b)(1), (b)(2), (b)(4), or (b)(5) and subsection (b)(3), notify the Agency in writing of the change. The notification must include a demonstration of compliance with the newly applicable subsection;

3) All sources complying with this Section under subsection (b)(1) must collect and record the following information for each cleaning solution used:

A) For each cleaning solution that is prepared at the source with automatic equipment:

i) The name and identification of each cleaning solution;

ii) The VOM content of each cleaning solvent in the cleaning solution;

iii) Each change to the setting of the automatic equipment, with date, time, description of changes in the cleaning solution constituents (e.g., cleaning solvents), and a description of changes to the proportion of cleaning solvent and water (or other non-VOM);

iv) The proportion of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution;

v) The VOM content of the as-used cleaning solution, with supporting calculations; and

vi) A calibration log for the automatic equipment, detailing periodic checks;

B) For each batch of cleaning solution that is not prepared at the source with automatic equipment:

i) The name and identification of each cleaning solution;

ii) Date, time of preparation, and each subsequent modification of the batch;

iii) The VOM content of each cleaning solvent in the cleaning solution;

iv) The total amount of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution; and

v) The VOM content of the as-used cleaning solution, with supporting calculations. For cleaning solutions that are not prepared at the site but are used as purchased, the manufacturer's specifications for VOM content may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a);

4) All sources complying with this Section under subsection (b)(2) must collect and record the following information for each cleaning solution used:

A) The name and identification of each cleaning solution;

B) Date, time of preparation, and each subsequent modification of the batch;

C) The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent, as determined in accordance with the applicable methods and procedures specified in Section 219.110;

D) The total amount of each cleaning solvent used to prepare the as-used cleaning solution; and

E) The VOM composite partial vapor pressure of each as-used cleaning solution, as determined in accordance with the applicable methods and procedures specified in Section 219.110;

5) All sources complying with this Section under subsection (b)(3) must comply with the following:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, and upon initial start-up of a new emissions control system, include in the certification required by subsection (e)(3) a declaration that the monitoring equipment required under subsection (f) has been properly installed and calibrated according to manufacturer's specifications;

B) If testing of an emissions control system is conducted under subsection (g), the owner or operator must, within 90 days after conducting such testing, submit a copy of all test results to the Agency and must submit a certification to the Agency that includes the following:

i) A declaration that all tests and calculations necessary to demonstrate compliance with subsection (b)(3) have been properly performed;

ii) A statement whether the subject cleaning operation is or is not in compliance with subsection (b)(3);

iii) The operating parameters of the emissions control system during testing, as monitored in accordance with subsection (f);

C) Collect and record daily the following information for each cleaning operation subject to the requirements of subsection (b)(3):

i) Emissions control system monitoring data in accordance with subsection (f), as applicable;

ii) A log of operating time for the emissions control system, monitoring equipment, and associated cleaning equipment;

iii) A maintenance log for the emissions control system and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages;

D) Maintain records documenting the use of good operating practices consistent with the equipment manufacturer's specifications for the cleaning equipment being used and the emissions control system equipment. At a minimum, these records must include:

i) Records for periodic inspection of the cleaning equipment and emissions control system equipment with date of inspection, individual performing the inspection, and nature of inspection;

ii) Records for repair of malfunctions and breakdowns with identification and description of incident, date identified, date repaired, nature of repair, and the amount of VOM released into the atmosphere as a result of the incident;

6) All sources complying with this Section under subsection (b)(5) must collect and record monthly the following information for each cleaning operation subject to subsection (b)(5):

A) The name, identification, and volume of each VOM-containing cleaning solution as applied in each cleaning operation;

B) The volume of each fresh cleaning solvent used for cleaning coating, ink, adhesive, or resin manufacturing equipment;

C) The volume of cleaning solvent recovered for either offsite or onsite reuse or recycling for further use in the cleaning of coating, ink, adhesive, or resin manufacturing equipment;

7) The owner or operator of a source with cleaning operations that fall under one or more of the exclusions in subsection (a)(2)(C)(v), (a)(2)(C)(xiii) or (a)(2)(C)(xvii), including sources exempt from the limitations of this Section because of the criteria in subsection (a)(1), must:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes a declaration that the source has cleaning operations that fall under one or more of the exclusions in subsection (a)(2)(C)(v), (a)(2)(C)(xiii) or (a)(2)(C)(xvii), and a statement identifying each such cleaning operation and the exclusion applicable to each cleaning operation;

B) Collect and record the name, identification, and volume of each cleaning solvent as applied each day in each cleaning operation that falls under one or more of the exclusions in subsection (a)(2)(C)(v), (a)(2)(C)(xiii), or (a)(2)(C)(xvii); and

C) Notify the Agency in writing if the amount of cleaning solvent used in the cleaning of medical device and pharmaceutical manufacturing operations or of sterilization indicating ink application equipment at the source ever exceeds 5.7 liters (1.5 gallons) per day, or if the amount of aerosol cleaning products used at the source ever exceeds 4.7 liters (1.25 gallons) per day, within 30 days after the exceedance occurs;

8) The owner or operator of a source with cleaning operations that fall under one or more of the exclusions in subsection (a)(2)(C)(xviii) or (a)(2)(C)(xix), including sources exempt from the limitations of this Section because of the criteria in subsection (a)(1), must:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes a declaration that the source has cleaning operations that fall under one or more of the exclusions in subsection (a)(2)(C)(xviii) or (a)(2)(C)(xix), and a statement identifying each such cleaning operation and the exclusion applicable to each cleaning operation;

B) Collect and record the name identification, volume, and VOM content of each cleaning solvent as applied each month in each cleaning operation that falls under one or more of the exclusions in subsection (a)(2)(C)(xviii) or (a)(2)(C)(xix);

C) For cleaning operations that fall under the exclusion in subsection (a)(2)(C)(xviii), collect and record each month information demonstrating that the exempt cleaning solvent is being used exclusively for the cleaning of plastic-based or vinyl-based substrates for use in the screen printing process when using UV curable ink and coating systems; and

D) For cleaning operations that fall under the exclusion in subsection (a)(2)(C)(xix), collect and record each month information demonstrating that the exempt cleaning solvent is being used exclusively for production line performance testing of coatings that are in research and development and are not yet commercially used for the applications for which they are being tested;

9) All sources subject to subsections (b) and (d) must notify the Agency of any violation of subsection (b) or (d) by providing a description of the violation and copies of records documenting the violation to the Agency within 30 days following the occurrence of the violation;

10) All records required by this subsection (e) must be kept by the source for at least three years and must be made available to the Agency upon request.

f) Monitoring Requirements

1) If an afterburner is used to demonstrate compliance, the owner or operator of a source subject to subsection (b)(3) must:

A) Install, calibrate, operate, and maintain temperature monitoring devices with an accuracy of 3 °C or 5 °F on the emissions control system in accordance with Section 219.105(d)(2) and in accordance with the manufacturer's specifications. Monitoring must be performed at all times when the emissions control system is operating; and

B) Install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring devices, such as a strip chart, recorder or computer, with at least the same accuracy as the temperature monitor;

2) If a carbon adsorber is used to demonstrate compliance, the owner or operator of a source subject to subsection (b)(3) must use Agency and USEPA approved continuous monitoring equipment that is installed, calibrated, maintained, and operated according to vendor specifications at all times the control device is in use. The continuous monitoring equipment must monitor the VOM concentration of each carbon adsorption bed or the exhaust of the bed next in sequence to be desorbed;

3) If an emissions control system other than an afterburner or carbon adsorber is used to demonstrate compliance, the owner or operator of a source subject to subsection (b)(3) must install, maintain, calibrate, and operate such monitoring equipment as stated in the owner's or operator's plan approved by the Agency and USEPA under subsection (b)(3).

g) Testing Requirements

1) Testing to demonstrate compliance with the requirements of this Section must be conducted by the owner or operator within 90 days after a request by the Agency, or as otherwise specified in this Section. The testing must be conducted at the expense of the owner or operator and the owner or operator must notify the Agency in writing 30 days in advance of conducting the testing to allow the Agency to be present during the testing;

2) Testing to demonstrate compliance with the VOM content limitations in subsection (b)(1), and to determine the VOM content of cleaning solvents and cleaning solutions, must be conducted as follows:

A) The applicable test methods and procedures specified in Section 219.105(a) must be used; provided, however, Method 24, incorporated by reference in Section 219.112, must be used to demonstrate compliance; or

B) The manufacturer's specifications for VOM content for cleaning solvents may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a); provided, however, Method 24 must be used to determine compliance. In the event of any inconsistency between a Method 24 test and the manufacturer's specifications, the Method 24 test must govern;

3) Testing to determine the VOM composite partial vapor pressure of cleaning solvents, cleaning solvent concentrates, and as-used cleaning solutions must be conducted in accordance with the applicable methods and procedures specified in Section 219.110;

4) For afterburners and carbon adsorbers, the methods and procedures of Section 219.105(d) through (f) must be used for testing to demonstrate compliance with the requirements of subsection (b)(3), as follows:

A) To select the sampling sites, Method 1 or 1A, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112;

B) To determine the volumetric flow rate of the exhaust stream, Method 2, 2A, 2C, or 2D, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112;

C) To determine the VOM concentration of the exhaust stream entering and exiting the emissions control system, Method 25 or 25A, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112. For thermal and catalytic afterburners, Method 25 must be used except under the following circumstances, in which case Method 25A must be used:

i) The allowable outlet concentration of VOM from the emissions control system is less than 50 ppmv, as carbon;

ii) The VOM concentration at the inlet of the emissions control system and the required level of control result in exhaust concentrations of VOM of 50 ppmv, or less, as carbon; and

iii) Due to the high efficiency of the emissions control system, the anticipated VOM concentration at the emissions control system exhaust is 50 ppmv or less, as carbon, regardless of inlet concentration. If the source elects to use Method 25A under this option, the exhaust VOM concentration must be 50 ppmv or less, as carbon, and the required destruction efficiency must be met for the source to have demonstrated compliance. If the Method 25A test results show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, a retest is required. The retest must be conducted using either Method 25 or Method 25A. If the retest is conducted using Method 25A and the test results again show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, the source must retest using Method 25;

D) During testing, the cleaning equipment must be operated at representative operating conditions and flow rates;

5) An owner or operator using an emissions control system other than an afterburner or carbon adsorber must conduct testing to demonstrate compliance with the requirements of subsection (b)(3) as stated in the owner's or operator's plan approved by the Agency and USEPA as federally enforceable permit conditions under subsection (b)(3).

(Source: Amended at 45 Ill. Reg. 3553, effective March 4, 2021)